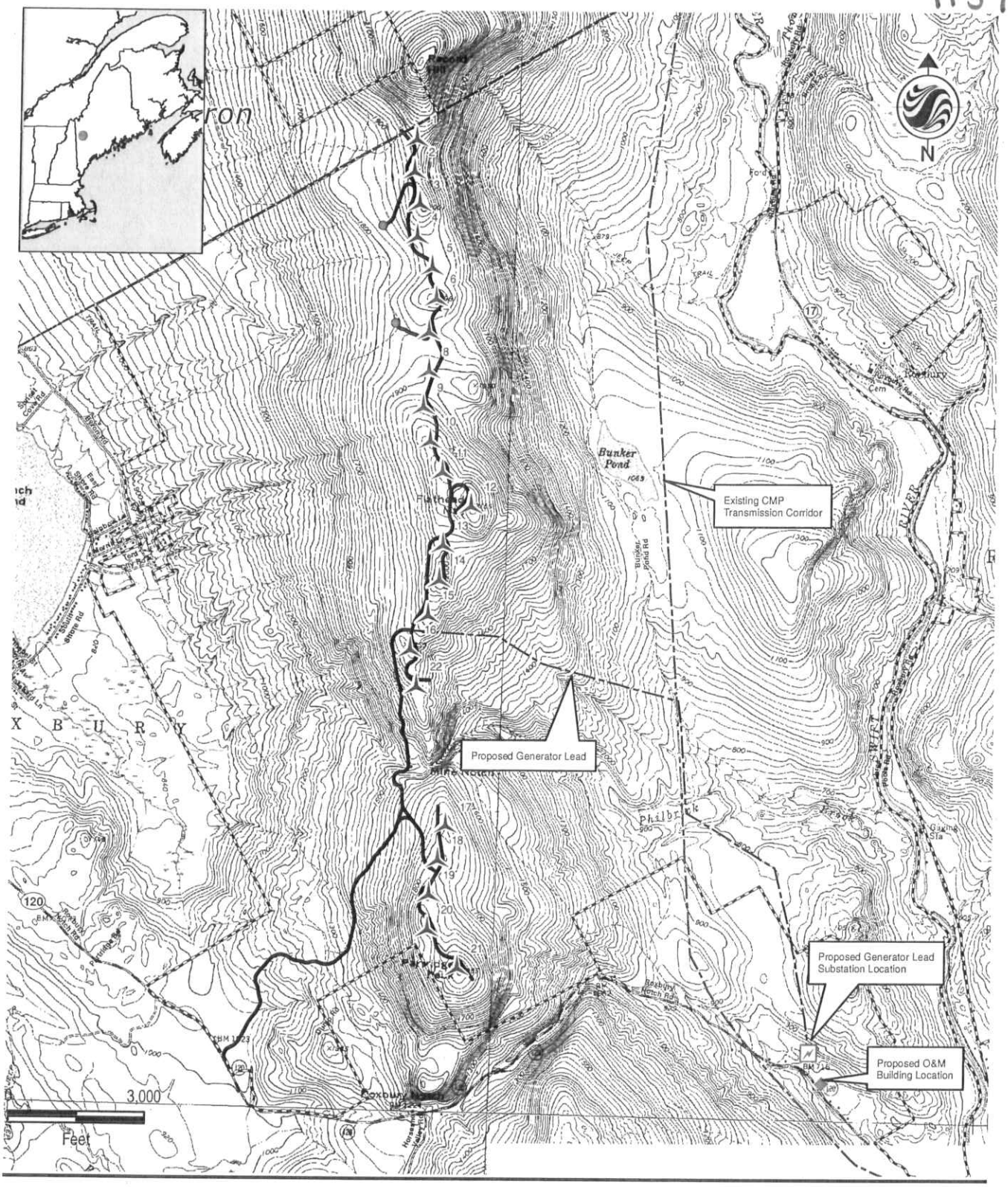
Record Hill Wind, LLC // Natural Resources Protection Act
Construction of 50.6 megawatt wind energy development - Roxbury

Excerpts from the Department's License Record – Statutory References

- Project Plans and Map

1139



Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME USA
04086
Phone (207) 729-1199
Fax: (207) 729-2715
www.stantec.com

Stantec

00115-00-8.5x11_USGS_location.mxd

Legend

- Proposed Turbine
- Proposed Access Roads and Crane Paths
- Proposed Permanent MET Tower
- Wagner Lands

Client/Project
Record Hill Wind, LLC
Record Hill Wind
Roxbury, Maine

Figure No.

Title
Project Site Map
July 22, 2009

1140

1.0 Project Description

The Record Hill Wind Project (Project) is a 50.6-megawatt (MW) wind project located in Roxbury, Oxford County, Maine (Figure 1). The Project also includes electrical collection infrastructure, an electrical substation, and an Operations and Maintenance (O&M) Building. The Project also will construct two permanent 80-meter guyed meteorological towers on the project site to monitor wind turbine performance. The locations for these towers are identified on attached Figure 1, as well as Sheets C-100 and C-114 of the Civil Plans included in Exhibit 1.

The turbine portion of the Project consists of 22 Siemens SWT-2.3-93 turbines, each of which is capable of generating 2.3 MW. Each turbine is 80 meters (approximately 262 feet) to the center of the hub, and a total of 126.5 meters (approximately 415 feet) to the tip of a fully extended blade. All of the land utilized for the generation portion of the Project is located within property currently used for commercial forestry operations. The site contains developed logging roads that will be upgraded and used, where appropriate, to minimize clearing and wetland impacts.

Turbines are planned to be located in the town of Roxbury. Power from the 22 turbines will be collected in 34.5-kilovolt (kV) collector lines and delivered to a collector station located southeast of the main ridgeline. The majority of these collector lines will travel underground along the ridgeline and then move aboveground while traveling down-mountain. Once the collector lines reach the existing Central Maine Power Company (CMP)-owned electrical corridor at the base of the ridgeline, the collector line will turn south and travel cross-country to the collector station. The entire length of the generator lead (the portion of the line that travels aboveground) is approximately 2.9 miles. At the collector station, the power will be converted to 115 kV and passed to a new CMP substation for transmission to the regional market through transmission lines owned and operated by CMP. CMP will upgrade these lines prior to project operation. Required permit applications for the line upgrade will be submitted separately by CMP.

Environmental studies completed before filing include two seasons of avian and bat surveys; a breeding bird survey; wetland delineations of the proposed ridgeline turbine corridor, proposed access road corridors, and proposed electrical collection system, including a transmission line corridor and new substation; "in season" vernal pool surveys; and a rare, threatened, and endangered plant species survey. Additional reports and surveys include an analysis of historic architecture, Euro-American and Pre-Contact archaeology, visual impact analysis, shadow flicker analysis, sound analysis, and soils evaluation.

The final design for the Project includes approximately 31,221 square feet of wetland clearing and 10,689 square feet of wetland fill associated with the Project design. Approximately 12 percent of the wetland fill is a result of expanding the existing Mine Notch Road. In addition, there are three new and one expanded stream crossings resulting from the civil design. The generator lead crosses seven streams; none of these seven stream crossings propose any in-stream work.

2.0 Construction Plan

Construction is expected to take place in two phases, with the project fully operational in late 2010. The two-phased approach allows a construction schedule that maximizes the use of dry construction seasons and minimizes environmental impacts associated with spring-time construction. Construction of the project will generally follow the sequence of events detailed below.

Phase 1 –Fall-Winter 2009

1. Mobilization and preliminary layout and staking of new road segments, turbine clearings, an O&M building, and a substation site.
   Week 1 – Week 4

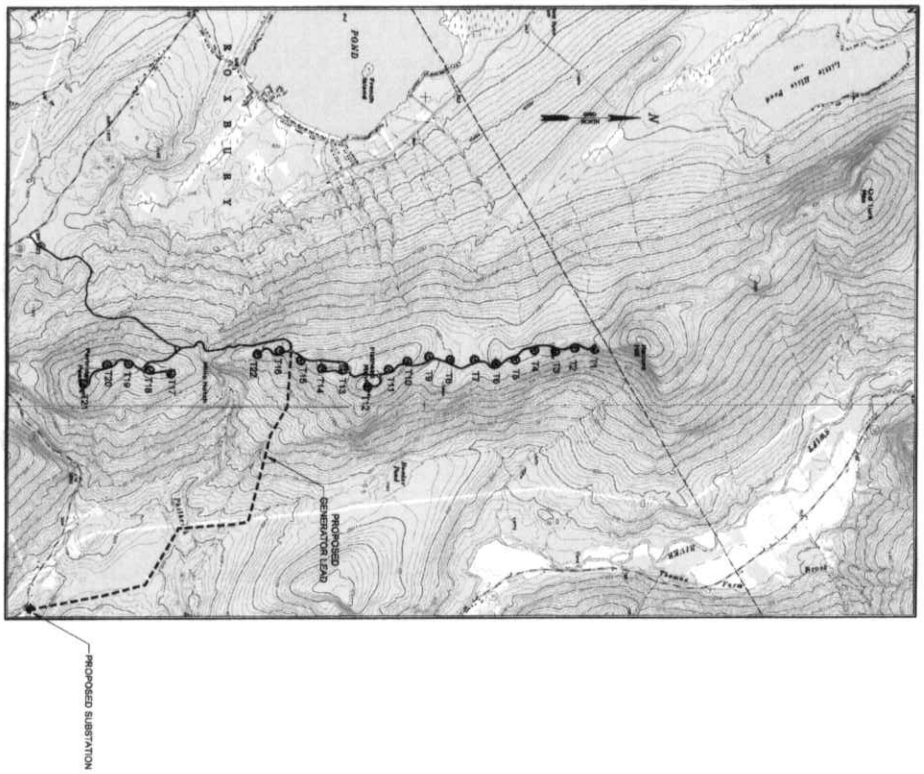
2. Commence clearing operations for roads, electrical collector lines, O&M building, and substation. Installation of erosion control measures in areas specified or required.
   Week 3 – Week 8
3. Installation of erosion control measures in areas specified or required.
   Week 4 – Week 15
4. Stumping, grubbing, and initial rough grading for roads and turbine laydown areas.
   Week 5 – Week 16
5. Blasting as necessary and on-site stockpiling of reusable blasted bedrock/ledge.
   Week 6 – Week 18
6. Stockpiling of imported road aggregate from local borrow pits (if required).
   Week 7 – Week 19
7. Final grading for roads and turbine areas.
   Week 7 – Week 20
8. Construction of turbine foundations and substation transformer pad.
   Week 11 – Week 24
9. Depending on turbine delivery schedule, some installation of overhead/underground 34.5-kV on-site electrical collection system, including pad-mount transformers may take place in this phase. Steps not taking place in 2009 will instead begin during Week 1 of Phase 2.

   Week 13 – Week 30

   <u>Phase 2 – Summer 2010</u>

10. Delivery of turbine components to individual turbine sites.
    Week 1
11. Erection of base/mid-tower sections, assembly of rotors, erection of top tower section and nacelle, and erection of assembled rotor. Tower wiring, final cleaning, and final quality checks of wind turbine.
    Week 2 – Week 20
12. Substation and O&M Building construction.
    Week 6 – Week 21
13. Energization of substation and collection system with quality checks.
    Week 22
14. Commissioning and testing of wind turbine generators and electrical interconnections.
    Week 22-Week 30
15. Start of commercial operations.
    Week 30
16. Reseeding of temporary cleared areas.
    Week 20 – Week 32

1142



LOCATION PLAN

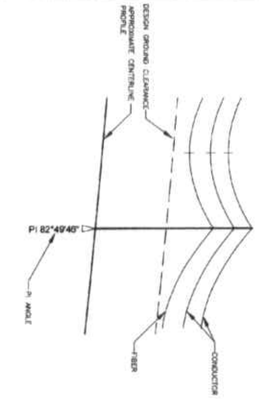
SCALE: 1" = 2,000'±

LOCATION PLAN LEGEND

- PROPOSED SUBSTATION LOCATION
- PROPOSED WIND TURBINE LOCATIONS
- 34.5 kV GENERATOR LEAD
- TOWN LINE

STRUCTURE INFORMATION DETAIL

NOT TO SCALE



PLAN AND PROFILE LEGEND

- PROPOSED UTILITY POLE/STRUCTURE (WOOD)
- OVERHEAD 34.5 kV COLLECTOR LINE
- CLEARING LIMITS
- EXISTING TRAILS/PATHS
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- WETLAND

GENERAL NOTES:

1. ENVIRONMENTAL CONSTRAINTS BY STANTEC INC.
2. TERRAIN MAPPING BY JAMES W. SEWALL CO.
3. AERIAL PHOTO IS FROM CHARTIFF AND USDS NATIONAL AGRICULTURE IMAGERY PROGRAM.
4. USGS TOPO QUAD FROM SEWAN NAVIGATOR.

ISSUED FOR PERMIT REVIEW - NOT FOR CONSTRUCTION

DWG. 101-1010	SHEET 2 of 6	Independence Wind, LLC
Title: RECORD HILL 34.5 kV GENERATOR LEAD INDEX SHEET	Project: RECORD HILL WIND PROJECT OXFORD COUNTY, MAINE	Client: RECORD HILL WIND LLC 110 FORESIDE ROAD, CUMBERLAND FORESIDE, ME 04110

THE INFORMATION CONTAINED HEREIN IS STRICTLY CONFIDENTIAL AND IS THE SOLE PROPERTY OF THE PROJECT OWNER.

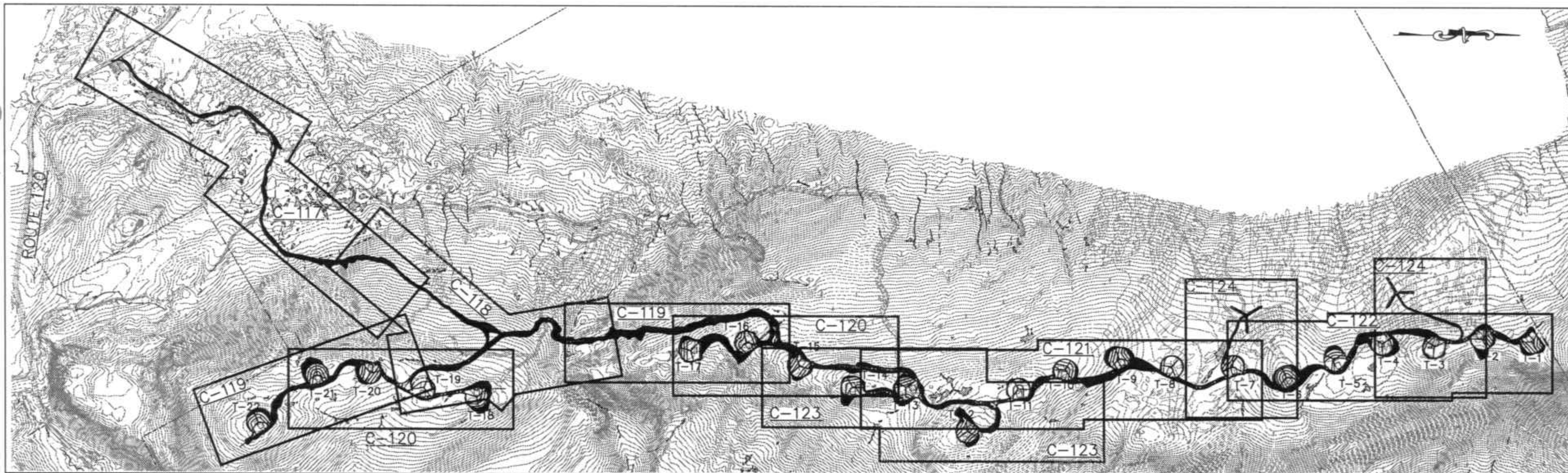
SGC ENGINEERING, LLC
- Civil Design & Survey Engineering
- Environmental & Regulatory Permitting
- Electrical Power Systems Engineering

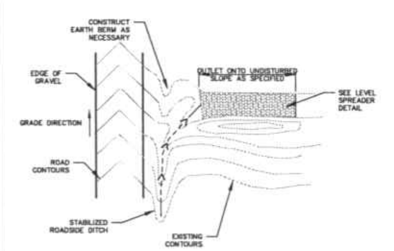
Offices: Westbrook & Orono, Maine; South Burlington, Vermont; Farmington, New Mexico

SGC Project	Date	Scale	Drawn	Design	Appd
748002	JULY 10, 2009	AS NOTED	MGL	AJG	AJG

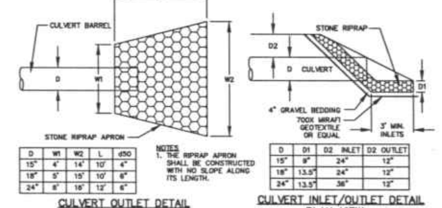
STATE OF MAINE — ANDREW J. GILMORE — No. 11414 — LICENSED PROFESSIONAL ENGINEER

NO.	REVISIONS:	APPD:	DATE:
0	ISSUED FOR PERMIT REVIEW	AJG	07/10/09





TYPICAL DITCH TURNOUT
NOT TO SCALE



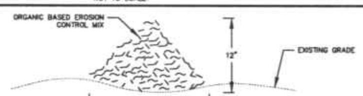
D	W1	W2	L	d50
15"	4'	14'	10'	4"
18"	5'	15'	10'	6"
24"	8'	16'	12'	6"

NOTES
1. THE RIPRAP APRON SHALL BE CONSTRUCTED WITH NO SLOPE ALONG ITS LENGTH.

CULVERT OUTLET DETAIL PLAN VIEW
NOT TO SCALE

D	D1	D2 INLET	D2 OUTLET
15"	9"	24"	12"
18"	13.5"	24"	12"
24"	13.5"	36"	12"

CULVERT INLET/OUTLET DETAIL PLAN VIEW
NOT TO SCALE



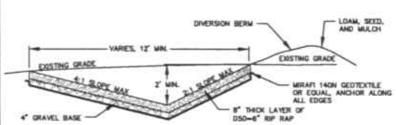
COMPOSITION

EROSION CONTROL MIX SHALL BE MANUFACTURED ON OR OFF THE PROJECT SITE SUCH THAT ITS COMPOSITION IS IN ACCORDANCE WITH THE MDEP MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL, LAST REVISED 3/2003 OR LATER. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

INSTALLATION:

1. THE BARRIER MUST BE PLACED ACROSS THE SLOPE, ALONG THE CONTOUR.
2. EXISTING GROUND SHALL BE PREPARED SUCH THAT THE BARRIER MAY LIE NEARLY FLAT ALONG THE GROUND TO AVOID THE CREATION OF VOIDS AND BRIDGES IN ORDER TO MINIMIZE THE POTENTIAL OF WASH OUTS UNDER THE BARRIER.
3. THE BARRIER SHALL BE A MINIMUM OF 1 FOOT HIGH (AS MEASURED ON THE UPHILL SIDE) AND 2 FEET WIDE FOR SLOPES LESS THAN 5% IN GRADE AND SHALL BE WIDER TO ACCOMMODATE THE ADDITIONAL RUNOFF.
4. EROSION CONTROL MIX MAY BE INSTALLED WHERE SILT FENCE IS ILLUSTRATED ON THE DESIGN PLANS IN AREAS EXCEPT IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS: WETLAND AREAS, AT POINTS OF CONCENTRATED FLOW, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS AND CLOSED STORM SYSTEMS AND AT THE BOTTOM OF STEEP SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM.

EROSION CONTROL MIX BERM
NOT TO SCALE

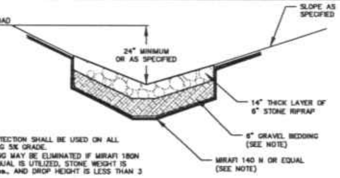


CROSS SECTION

NOTE: SEE GRADING PLAN FOR LENGTH

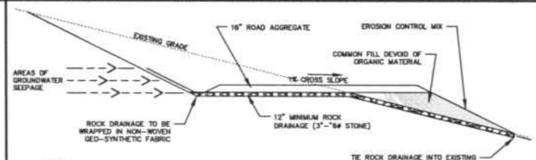
LEVEL SPREADER NOTES
1) ALL LEVEL SPREADERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION.
2) ALL LEVEL SPREADERS SHALL BE CONSTRUCTED IN A CUT SECTION, I.E. THERE SHALL BE NO EARTH FILL ALONG DOWNSTREAM EDGE.
3) ALL LEVEL SPREADERS SHALL BE ALIGNED PARALLEL TO THE EXISTING CONTOURS.
4) THE ENTRANCE DITCH TO THE LEVEL SPREADER SHALL HAVE A MAXIMUM GRADE OF 1.0% FOR AT LEAST 50 FEET IMMEDIATELY PRIOR TO ENTERING THE SPREADER.
5) THE LEVEL SPREADER SHALL HAVE A LONGITUDINAL GRADE OF 0.0%

TYPICAL LEVEL SPREADER
NOT TO SCALE



NOTE:
1. STONE DITCH PROTECTION SHALL BE USED ON ALL DITCHES EXCEEDING 5% GRADE.
2. 6" GRAVEL BEDDING MAY BE ELIMINATED IF MIRAFI 180N GEOTEXTILE OR EQUAL IS UTILIZED, STONE WEIGHT IS LESS THAN 230 lbs., AND DROP HEIGHT IS LESS THAN 3 FEET.
3. GEOTEXTILE MAY BE ELIMINATED AS DETERMINED BY ENGINEER IF BASE OF DITCH IS CONSTRUCTED FROM BLAST ROCK.

TYPICAL STONE DITCH PROTECTION DETAIL
NOT TO SCALE

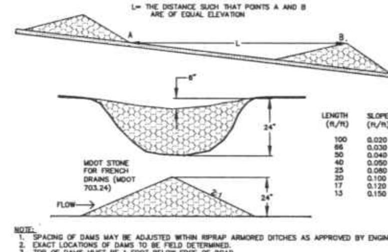


NOTE:
CULVERTS WITHIN ROCK SANDWICH SHALL BE PLACED SUCH THAT A MINIMUM OF 6" OF 3"-6" STONE IS BELOW INVERT.

ROCK SANDWICH TYPICALLY UTILIZED IN ROADWAY CUTS TRAVERSING AREAS WITH SHALLOW GROUNDWATER

TYPICAL ROCK SANDWICH DETAIL
NOT TO SCALE

L= THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION



LENGTH (ft/ft)	SLOPE (ft/ft)
100	0.020
66	0.030
50	0.040
40	0.050
25	0.080
20	0.100
17	0.120
13	0.150

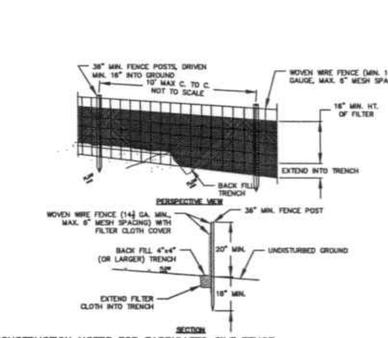
NOTE:
1. SPACING OF DAMS MAY BE ADJUSTED WITHIN RIPRAP ARMORED DITCHES AS APPROVED BY ENGINEER.
2. EXACT LOCATIONS OF DAMS TO BE FIELD DETERMINED.
3. TOP OF DAMS MUST BE 1 FOOT BELOW EDGE OF ROAD.

STONE CHECK DAM DETAILS
NOT TO SCALE

LINE LEGEND

PROPOSED | EXISTING

- ROAD CENTERLINE
- STREAM
- EDGE OF GRAVEL
- CONTOUR
- EDGE OF WETLANDS
- TREELINE
- UTILITY POLE
- STORM DRAIN
- ROCK OUTCROP
- SILT FENCE OF BARK MULCH BERM
- DITCH TURNOUT
- LEVEL SPREADER
- STONE CHECK DAM
- LEVEL LIP SPREADER
- HAY BALE BARRIER
- RIP RAP APRON



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

NOTE: THE CONTRACTOR HAS THE OPTION TO NOT USE WOVEN WIRE MESH IF STAKE SPACERS ARE REDUCED TO 6' O.C.

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVER 24" AT TOP OF MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE 2" HARDWOOD

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE DETAIL
NOT TO SCALE

HATCH LEGEND

- WETLANDS
- ROCK SANDWICH
- VEGETATIVE BUFFER (55')
- VERNAL POOL
- VEGETATIVE BUFFER (100')
- RIP RAP STABILIZATION
- DITCH TURNOUT/ LEVEL SPREADER BUFFER
- STONE BERM LEVEL LIP SPREADER BUFFER

Rev. #	Dwg. By	Description	Date

RECORD HILL WIND LLC
RECORD HILL WIND

Designed By: BCH | Drawn By: JCH
Date: 07/06/2009
Scale: NTS
Approved | Checked

Project Location: ROXBURY, MAINE

Drawing Description: **SEDERO INDEX SHEET AND SEDERO DETAILS**

Seal: STATE OF MAINE — JEFFREY ALLEN No. 6059 — LICENSED PROFESSIONAL ENGINEER

Project No. **61040E**

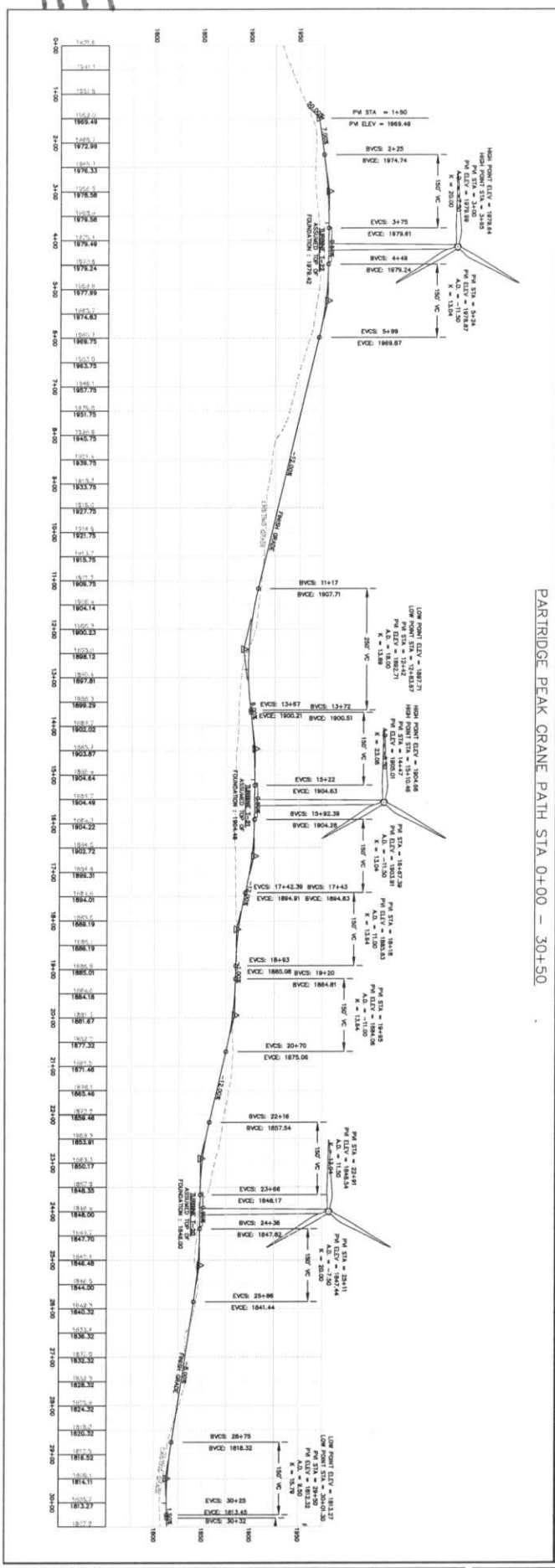
Engineer: SEWALL — JAMES W. SEWALL COMPANY | Since 1880 — SEWALL.COM — 800 648 4202

AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS

Phase: PERMIT

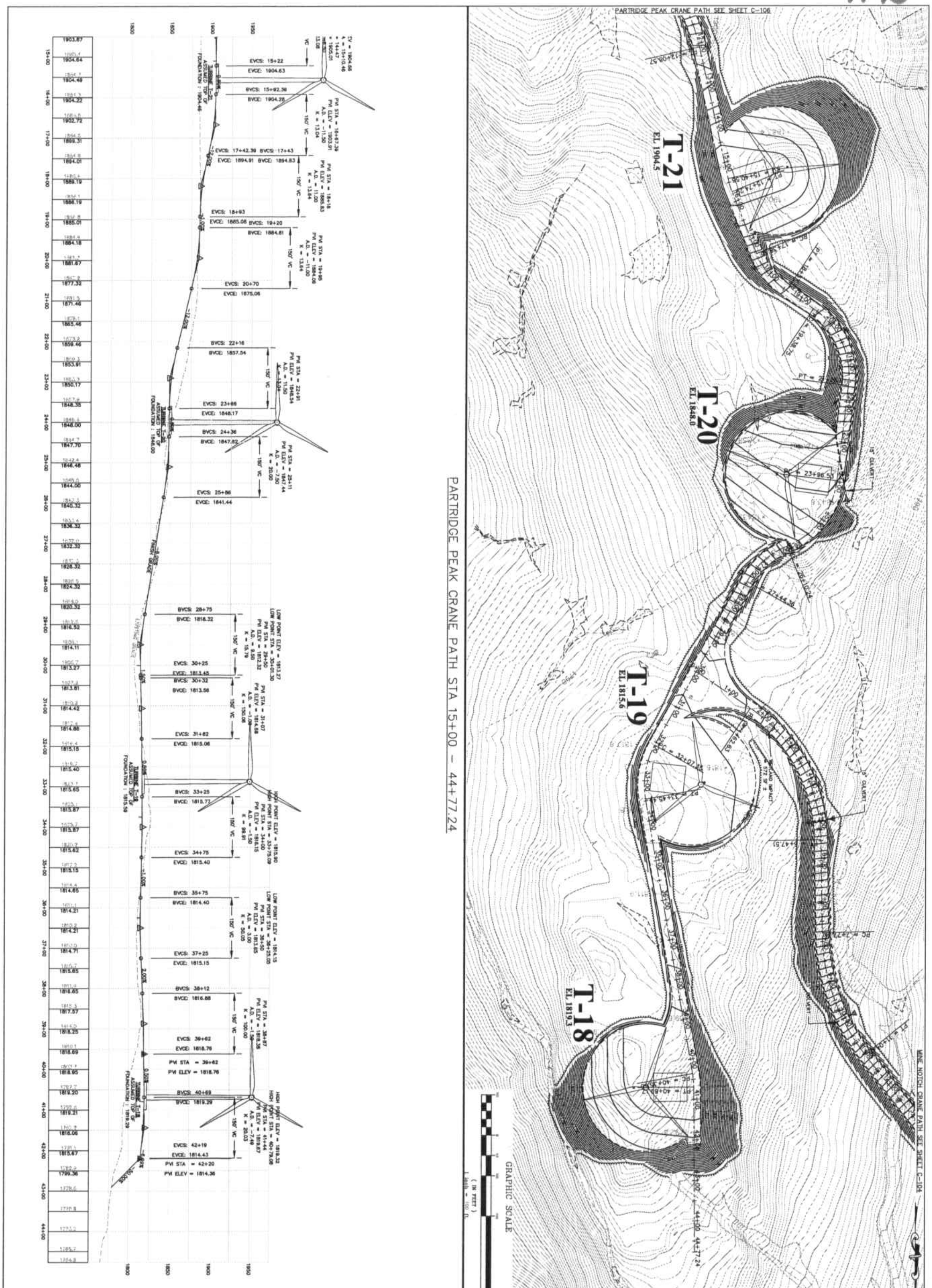
Sheet No. **C-116**

1144



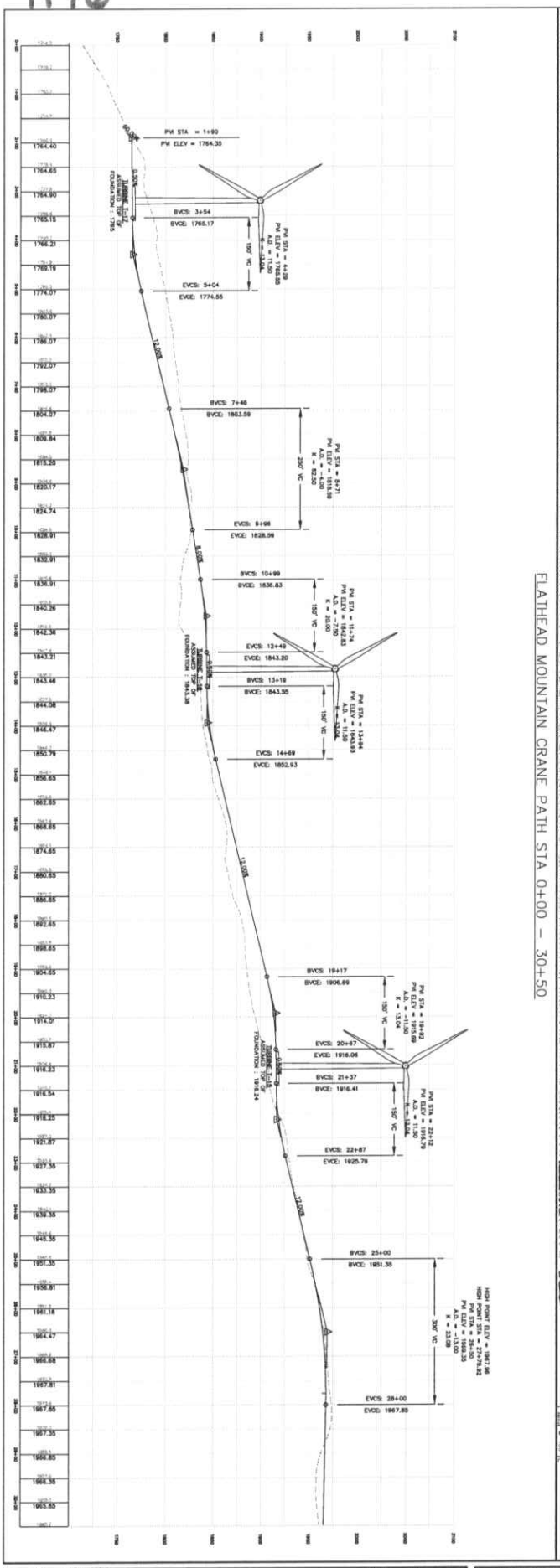
PERMIT	Project No. 61040E	RECORD HILL WIND LLC RECORD HILL WIND	Designed By: BCH; Drawn By: JGH; Date: 07/08/2008; Scale: H:1"=100' V:1"=50'
Sheet No. C-106	Engineer: SEWALL — JAMES W. SEWALL COMPANY (Since 1880) — AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS — 800 448 4302 — SEWALL.COM	Project Location: ROXBURY, MAINE	
	Seal: STATE OF MAINE — BRIAN C. HART — No. 10658 — LICENSED PROFESSIONAL ENGINEER	Drawing Description: PLAN AND PROFILE - PARTRIDGE PEAK ROAD STA 0+00 - 30+50	Approved: BCH; Checked: PG

Rev. #	Dwg. By	Description	Date
--	--	-	--

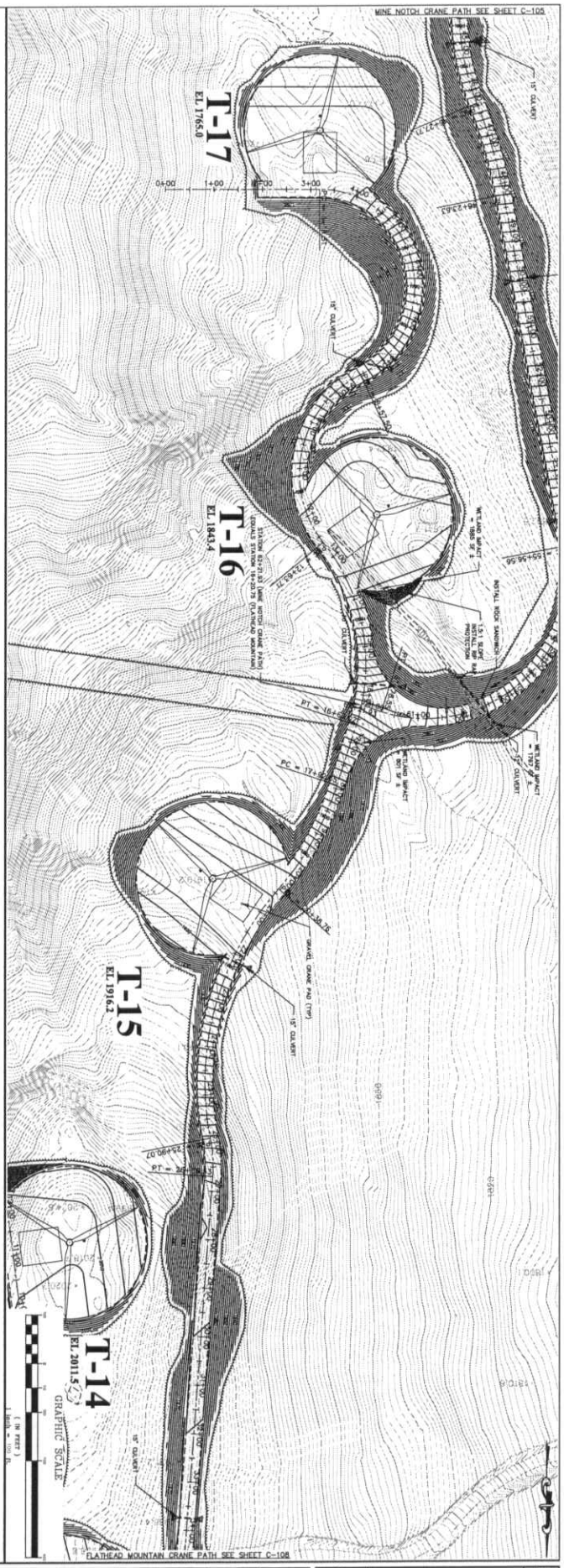


PERMIT	Project No. 61040E	RECORD HILL WIND LLC RECORD HILL WIND	Designed By: BCH · Drawn By: JCH · Date: 07/06/2009
Sheet No. C-107	SEWALL — JAMES W. SEWALL COMPANY Since 1880 — AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS	Project Location: ROXBURY, MAINE	Scale: H:1"=100' V:1"=60'
	Seal: STATE OF MAINE — HART — No. 10656 — LICENSED PROFESSIONAL ENGINEER	Drawing Description: PLAN AND PROFILE - PARTRIDGE PEAK ROAD STA 15+00 - 44+77.24	Approved: BCH · Checked: PG

1146



FLATHEAD MOUNTAIN CRANE PATH STA 0+00 – 30+50

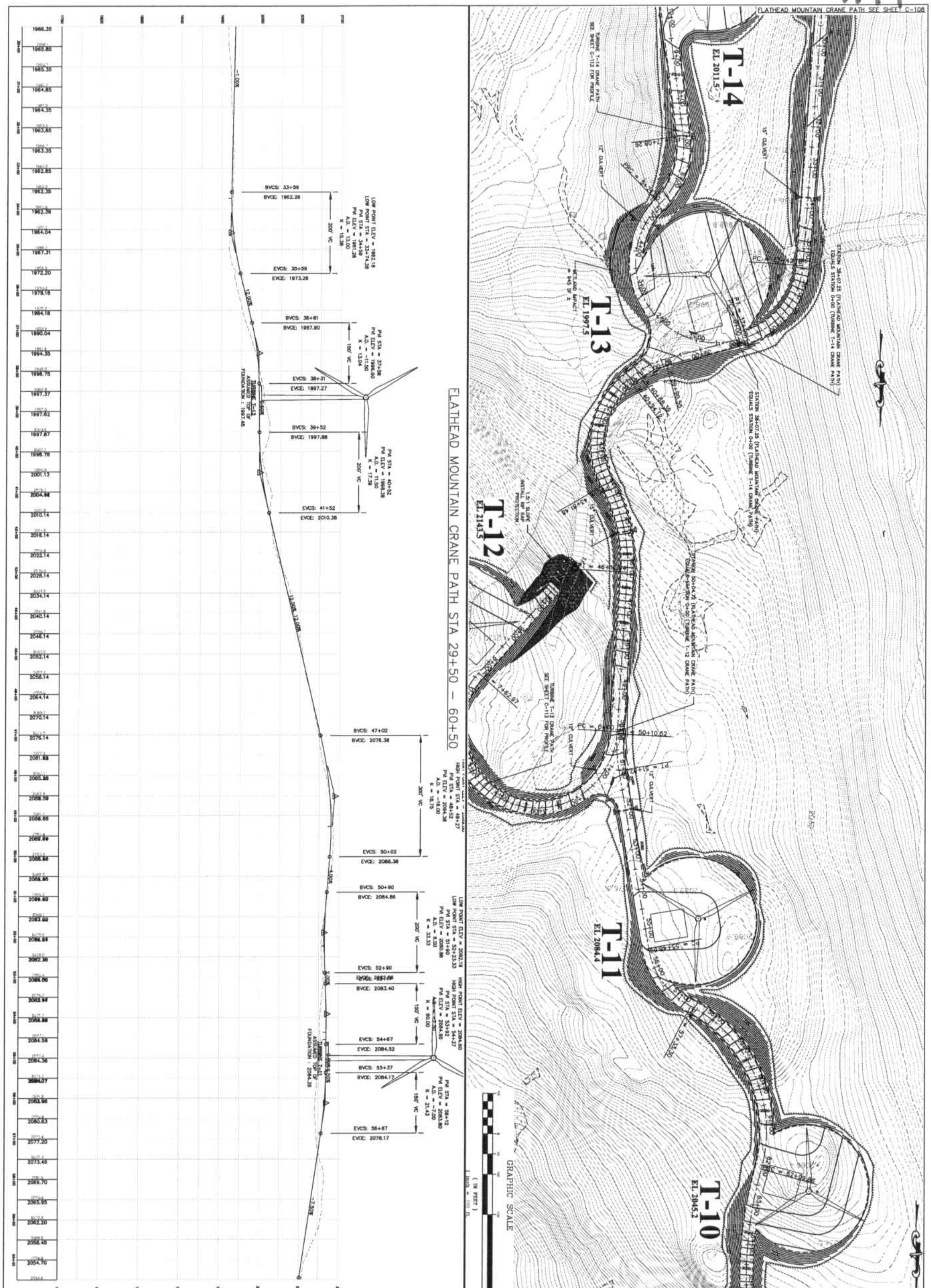


C-108	PERMIT	Prospect No.: 61040E	RECORD HILL WIND LLC RECORD HILL WIND
		Engineer: SEWALL JAMES W. SEWALL COMPANY · Since 1880 AN INTEGRATED TEAM OF GEOSPATIAL ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS	Project Location: ROXBURY, MAINE
		Seal: STATE OF MAINE, BRUCE C. HART, No. 10658, LICENSED PROFESSIONAL ENGINEER	Drawing Description: PLAN AND PROFILE - FLATHEAD MTN ROAD STA 0+00 - 30+50

Designed By	BCH
Drawn By	JCH
Date	07/06/2009
Scale	H:1"=100' V:1"=50'
Approved	BCH
Checked	PG

Rev. #	Dwg. By	Description	Date
–	–	–	–

1147



Sheet No. C-109	Phase PERMIT	Project No. 61040E	
Engineer: SEWALL — JAMES W. SEWALL COMPANY / Since 1880	AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS	Seal: STATE OF MAINE, HART, No. 10652, LICENSED PROFESSIONAL ENGINEER	

RECORD HILL WIND LLC
RECORD HILL WIND

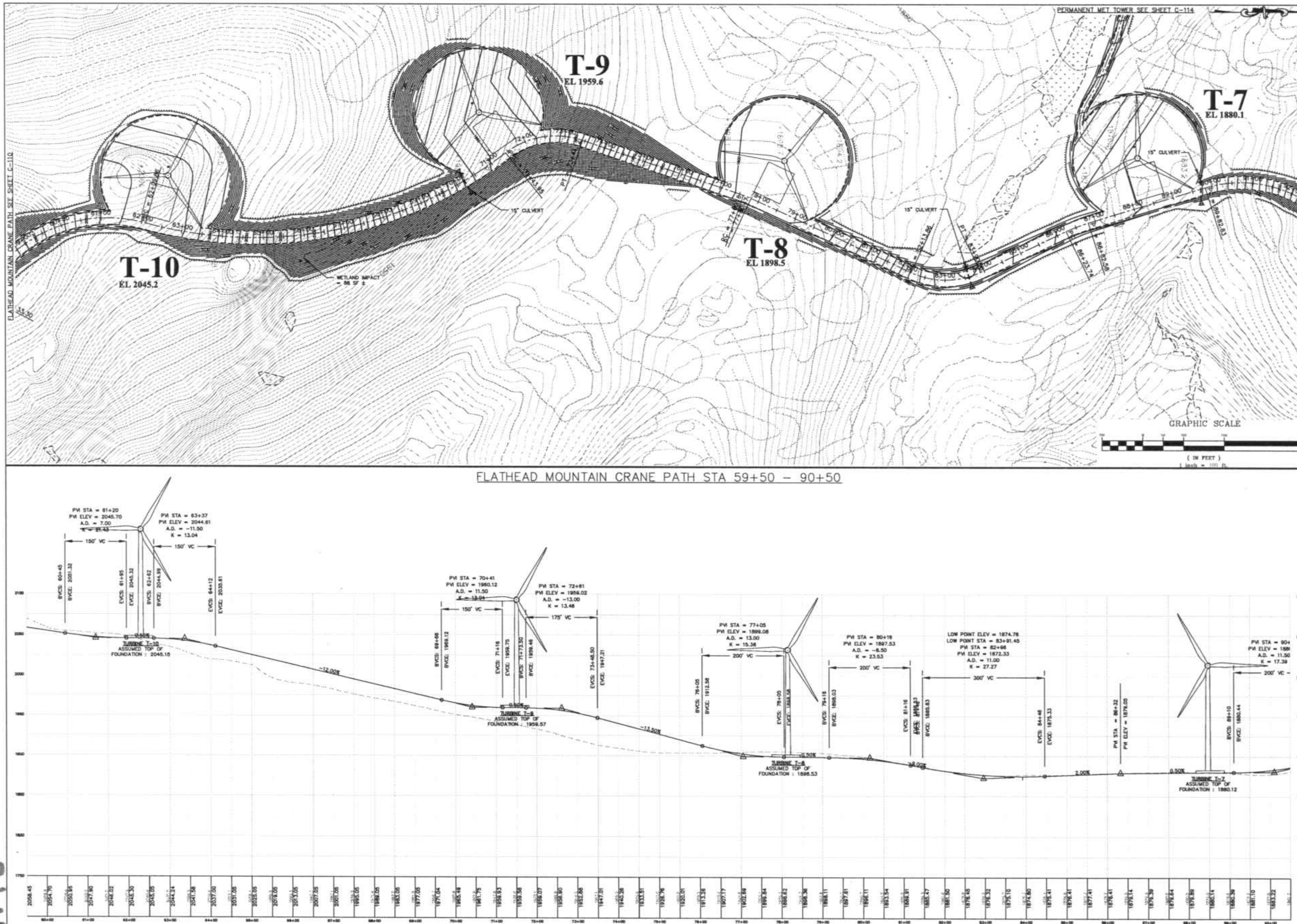
Project Location: ROXBURY, MAINE

Drawing Description: **PLAN AND PROFILE - FLATHEAD MTN ROAD STA 29+50 - 60+50**

Designed By	Drawn By
BCH	JCH
Date	
07/06/2009	
Scale	
H:1"=100'	V:1"=50'
Approved	Checked
BCH	PG

Rev. #	Dwg. By	Description	Date
–	–	–	–

1148



Designed By	Drawn By
BCH	JCH

RECORD HILL WIND LLC
RECORD HILL WIND

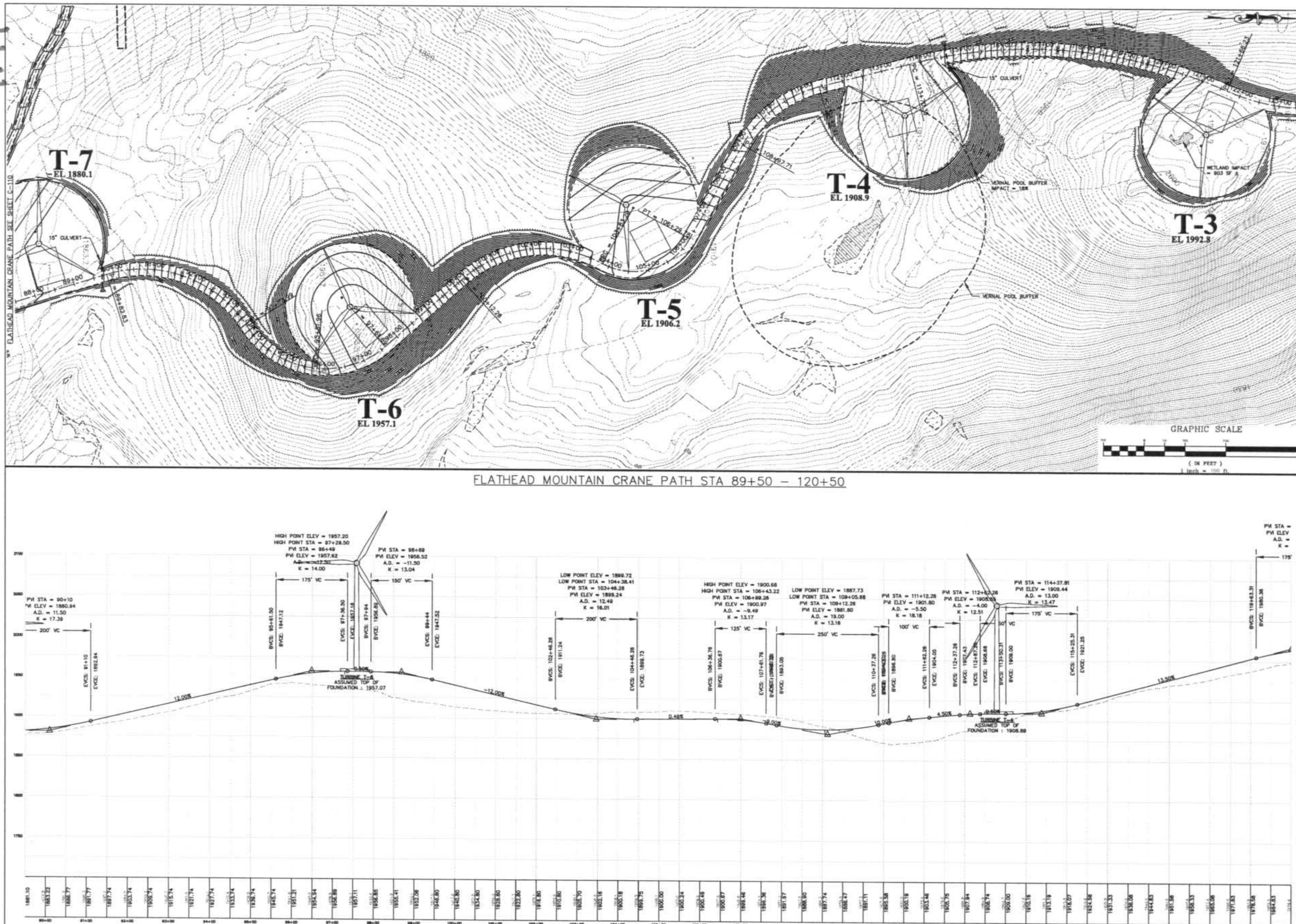
Date: 07/06/2009
Scale: H:1"=100' V:1"=50'
Project Location: ROXBURY, MAINE
Drawing Description: **PLAN AND PROFILE - FLATHEAD MTN ROAD STA 59+50 - 90+50**
Approved: BCH
Checked: PG

Seal: STATE OF MAINE — BRENT ... HART — No. 10658 — LICENSED PROFESSIONAL ENGINEER

Project No.: 61040E
Engineer: SEWALL — JAMES W. SEWALL COMPANY Since 1880 — SEWALL.COM
AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS

Phase: PERMIT
Sheet No.: C-110

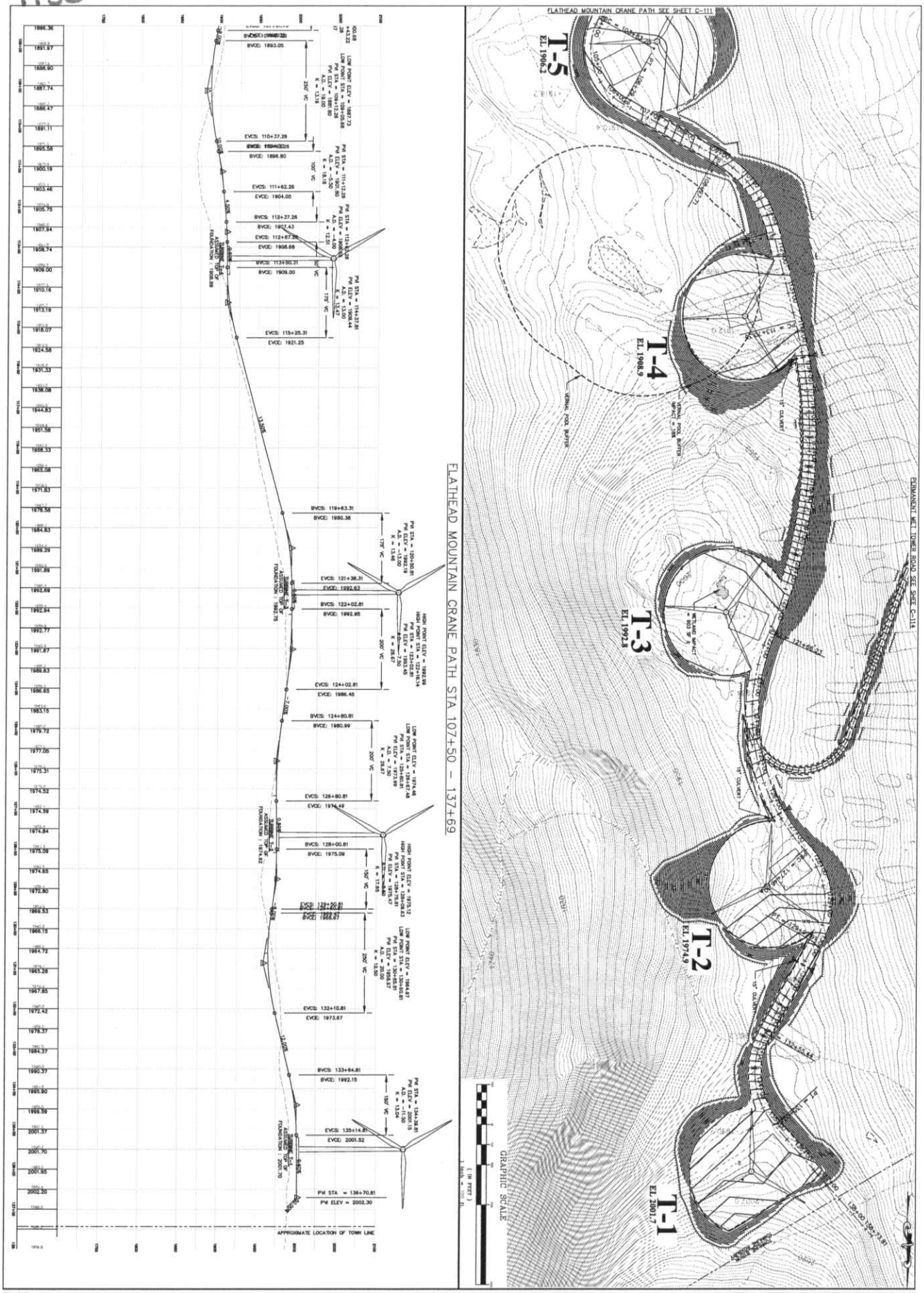
1149



Project No.	61040E
Engineer	SEWALL — JAMES W. SEWALL COMPANY / Since 1880 — AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS
Seal	STATE OF MAINE — BRENT HART — No. 10658 — LICENSED — PROFESSIONAL ENGINEER
Client	RECORD HILL WIND LLC / RECORD HILL WIND
Project Location	ROXBURY, MAINE
Drawing Description	PLAN AND PROFILE - FLATHEAD MTN ROAD STA 89+50 - 120+50
Designed By	BCH
Drawn By	JCH
Date	07/06/2009
Scale	H:1"=100' V:1"=50'
Approved	BCH
Checked	PG
Phase	PERMIT
Sheet No.	C-111

Rev. #	Dwg. By	Description	Date
-	-	-	-

1150



Sheet No. C-112	Phase PERMIT	Project No. 61040E	Seal: STATE OF MAINE, SCOTT E. HART, No. 10656, LICENSED PROFESSIONAL ENGINEER	RECORD HILL WIND LLC RECORD HILL WIND
		Engineer: SEWALL JAMES W. SEWALL COMPANY / Since 1840 AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS		Project Location: ROXBURY, MAINE
				Drawing Description: PLAN AND PROFILE - FLATHEAD MTN ROAD STA 107+50 - 137+69

Designed By	Drawn By
BCH	JCH
Date: 07/06/2009	
Scale: H:1"=100' V:1"=50'	
Approved: BCH	Checked: PG

Rev. #	Orig. By	Description	Date
"	"	"	"

1151

Project No.	61040E
Engineer	SEWALL — JAMES W. SEWALL COMPANY / Since 1880 — AN INTEGRATED TEAM OF GEOSPATIAL, ENGINEERING, SURVEYING AND NATURAL RESOURCE CONSULTANTS
Seal	LAWRENCE L. ALLEN No. 6059 LICENSED PROFESSIONAL ENGINEER
Title	RECORD HILL WIND RECORD HILL WIND LLC
Designed By	BCH
Drawn By	JCH
Date	06/18/2009
Project Location	RECORD HILL
Scale	1"=60'
Drawing Description	O&M/SUBSTATION DESIGN
Approved	
Checked	
Title	PERMIT
Sheet No.	C-201

Rev. #	Dwg. By	Description	Date